

FY 2013 Region 1 Refuge I&M Proposal Template

→Please limit description of each proposal to 5 pages

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Project title: Support for acoustic bat inventory at the Mid-Columbia River NWRC

Primary individual responsible for completing the project (name, title, contact information): Jenny Barnett, ZIMB. Jenny_barnett@fws.gov, 509-380-6479

Project abstract: *Provide a brief overview for the project, where specifics will be captured in the Evaluation Criteria table below.* This project will fund a temporary bio-technician to accomplish sampling on the Mid-Columbia NWR Complex for the Eastside Refuge Acoustic Bat Inventory Project. A total of 6 refuges in the Complex are scheduled for sampling in 2013. In 2012, work was completed by a biological technician but no refuge funding is available for a technician in 2013.

In 2013, McNary, Hanford Reach/Saddle Mountain (Hanford) and Columbia Refuges are scheduled to be sampled. Hanford and Columbia refuges contain large number of 10Km blocks, as identified in the sampling scheme. Hanford is large and remote, and a significant amount of work will be needed each week, to locate sampling locations and to service the detector will be required. The technician will also monitor bat use of bat houses/boxes that have been established on McNary NWR and Hanford. There are two different styles of bat boxes that have been deployed; a rocket box and colony roost box. These boxes have been installed over the last 4 years and have yet to be monitored for use. In addition, the technician will conduct acoustic bat monitoring in riparian restoration zones where we are restoring tree habitat which will eventually function as habitat for bats.

This project will leverage funding from Burned Area Emergency Response Funds which will be used to hire a technician to conduct post-fire rehabilitation monitoring and implementation. The technician will work on both projects to complete assigned tasks. Funding for the project will allow hiring a technician for a total of 6 months, 3 funded by this project. The technician will be available to conduct bat detector deployments on Mid-Co refuges and assist the ZIMB with management and analysis of the project data.

Funding Priorities (check all funding priorities that apply to the project):

x	Inventory Project/Collection of Baseline Data	<input type="checkbox"/>	Adaptive Management
x	Data Compilation and Management	x	Protocol Development
<input type="checkbox"/>	Purchase of Equipment	<input type="checkbox"/>	Evaluate effects of environmental stressors, incl. climate change
x	Leveraging existing programs supporting surveys on refuges.		

Project objective(s): The objective of this project is to accomplish acoustic bat inventory on the Mid-Columbia River National Wildlife Refuge Complex. The inventory is part of the Eastside Zone Acoustic Bat Inventory, managed by the Zone I&M Biologist. Under the project model, refuge staffs are responsible for deploying and servicing bat detectors, while the ZIMB handles data management and analysis.

Describe how project deliverable(s) will be used by the refuge staff for decision making: Mid-Columbia River refuges lack basic bat inventory data, although inventory of potential bat habitat is an objective in several of the Complex's CCPs. The project will provide baseline data on bat occurrence and distribution across the eastside zone, Baseline data on species composition and activity rates will also be helpful to help evaluate the eventual impact of White-nose Syndrome on bats in the Pacific Northwest.

Conducting bat monitoring in conjunction with a riparian restoration project, will provide information on how habitat management may impact bat use. Very little of this type of information is available for bats.

Methods: Methodology follows that created for the "Eastside Refuges Acoustic Bat Inventory", started by the I&M Program in 2012. The Oregon/Washington Bat Grid (Bat Grid) is overlaid on refuge boundaries. The 10-km Bat Grid Cell is the basic unit for sampling. Within the 10-km cell, 3 sample locations are selected. Sample locations are adjacent to water sources (pond, river, land, marsh, etc), but have minimal noise and offer some level of security for the detector. Detectors are deployed for 7 nights at a time, and set to record from sunset to 3.5 hours after sunset.

The bat detectors record sound files to CF data cards, which are mailed to the ZIMB for analysis using SonoBat software.

Describe any statistical assistance, GIS, or database support needed: No additional support needed.

Project implementation timeline, including schedules for field/lab/office work, data management (entry, QA/QC, analyses, archiving), and deliverables (e.g., progress/final reports, potential peer-reviewed publications): Sampling is scheduled to begin in June 2013 and be completed by September 2013. All data collected will be

given to the Zone I&M Biologist (ZIMB) who is responsible for completing the project data analysis and reporting.

Project completion date (and mid-completion date, if project extends into FY2014):

Technical work will be completed September 2013. ZIMB final project report is due June 15, 2014, as identified in the original project proposal.

Briefly describe how the project will address each of the following Evaluation Criteria:

- 1. Planning Connection:** McNary, Umatilla, and Columbia Refuges list bat inventory, and protection of rock outcrop habitats as objectives in their CCP. No refuges in the complex have previous information on bat species presence.
- 2. Large Investment in Management Actions:** Mid-Columbia River Complex has already invested significant staff time in this project. A total of 4 detectors were deployed throughout the complex in 2012. Due to the number of refuges, and variation in refuge size, a decision was made to focus on completing sampling on smaller refuges in 2012, and forgo sampling on the larger ones until 2013. Sampling was completed on Cold Springs and McKay Creek in 2012, and is nearly complete on Umatilla, Conboy Lake and Toppenish. No sampling was conducted on McNary, Hanford, or Columbia Refuge. Failure to complete sampling on these Refuges will produce a sizable hole in the bat inventory project across the entire Eastside zone.
- 3. Partners:** This multiple-refuge project is conducted in conjunction with the I&M Program and coordinated by the Zone I&M Biologist. National Park Service and US Forest Service Biologists assisted with development of the sampling protocol. The Washington Department of Fish and Wildlife has recently asked for bat occurrence data from this study to inform their Washington State Bat Conservation Plan (in draft). Our study found long-eared Myotis on Umatilla NWR, and canyon bat on Toppenish and Umatilla Refuges, all representing new occurrence records in the state. Sampling on McNary and Columbia Refuges is expected to add records for several species in Walla Walla and Adams Counties.
- 4. Controversy:** The project does not address a controversy.
- 5. National I&M Priority:** This project represents biotic inventory, a national priority of the I&M Initiative. Bats represent a little-known taxa group on refuges.
- 6. Project Design:** Project design is outlined in the project proposal submitted in 2012, "Zone Bat Proposal 2012". Working in conjunction with biologists from the National Park Service and US Forest Service, sampling was aligned with the Oregon/Washington Bat Grid to facilitate use of locally collected data in regional analysis. The basic sample unit was a 10-km grid from the Bat Grid, and Pettersson D500x bat detectors was placed on the landscape for 7 night periods. SonoBat software was used to attribute call files with sampling location for archiving, to scrub out noise files, and identify calls to species. A biologist with the BLM is verifying call file identification.

Data collected will provide a baseline of bat species occurrence, distribution and activity rates in anticipation of White-nose Syndrome arrival in the area.

7. **Data Management (Complete the next section)**
8. **Continuity:** Project represents continuity of the baseline inventory project for the Refuge Complex, as well as I&M zone. Failure to sample these refuges would represent a sizeable hole in the entire project.
9. **Other Evaluation Criteria**

Briefly describe how the project will address each of the following elements of a Data management plan (See Appendix 1 in the RFP for definitions and examples):

Data management pertains to the lifecycle of the project. The plan should address how data are managed during the project as well as the intended storage and distribution of final products.

- **Description:** Develop bat species lists for refuges and estimate bat activity rates using acoustic detection methods.
- **Data Management Budget:** Approximately 60% of the ZIMB time for the project will be spent on data management. Data management includes tracking deployments in a project database, processing call files in SonoBat software, and managing SonoBat output data. Region 1 Data Manager will develop a database for tracking deployments and associated data.
- **Format:** Raw call files are in *.wav format. Deployment metadata and SonoBat outputs are stored in an Access Database.
- **Data Processing and Workflows:** Refuge staff and volunteers deploy bat detectors following project protocol. CF cards containing data are mailed to the ZIMB. The ZIMB enters metadata about the deployment into the project database. Call files are scrubbed using SonoBat D500x File Attributer 2.2. Non-scrubbed files are analyzed using Batch Processor in SonoBat software. Output file from the batch process is imported into the project database.
- **Quality Checks:** Refuge biologists will be able to check maps of detector locations, to determine if location information is correct. SonoBat Species identification will be verified by a biologist experienced with bat call file analysis. Special care will be taken to verify classifications that occur outside a species known range.
- **Back-up and Storage:** Call files will be organized by deployment and stored on an external hard drive in the ZIMB's office. A backup copy will be stored in the Mid-Columbia River Complex office. Main project database will be stored on the ZIMB laptop computer, back-up copy in the Mid-Columbia River Complex Office. Upon project completion, database will be loaded into ServCat.
- **Metadata:** Metadata will be in the FGDC format.
- **Restrictions:** There are no restrictions on these data.
- **Contact:** Jenny Barnett, Zone Inventory and Monitoring Biologist, jenny_barnett@fws.gov

Requested funding up to \$40,000 (provide dollar amount in the budget table for each FY if this is a multi-year project):

Item	FY13	FY14
Contracts		
Materials/Equipment		
FWS Personnel Costs: GS-0404-05 Biological Technician @ 15.00 per hour X 30% admin overhead (benefits, equipment, etc.) = 19.50 per hour X 80 hours	\$9,360.00	

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per pay period X 6 pay periods =\$9,360.00		
Other (specify):		
FY TOTAL(S)	\$9,360.00	